recd from Larry Muench Harvard University on Tues Aug 11, 1998

Test #1 Results

Page 1 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 08/05/98 10:48:52

REPORT TO: JOSEPH P. McCABE, INC
509 EAST FIRST STREET
SOUTH BOSTON, MA 02127
617-268-2030
ATTEN ANDREW McCABE

PREPARED BY: TOXIKON CORPORATION
15 WIGGINS AVE
BEDFORD, MA 01730
CERTIFIED BY

ATTEN PAUL LEZBERG
PHONE (617)275-3330 CONTACT JOHNM

CLIENT MCCABE SAMPLES 9
COMPANY JOSEPH P. McCABE, INC
FACILITY 509 EAST FIRST STREET
SOUTH BOSTON, MA 02127

MA CERT # M-MA064; TRACE METALS, SULFATE, CYANIDE, RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, PH, INMS, VOC, PEST., NUTRIENTS, DEMAND, O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10770 FL HRS E07143, NJ DEP 59938, NC DNR286, SC 88002, NH 204091-C,

WORK ID HARVARD UNIVERSITY CONSTRUCT.
TAKEN 7/30/98
TRANS
TYPE WATER
P.O. #
INVOICE under seperate cover

VERIFIED BY:

SAMPLE IDENTIFICATION

K { 01 CBK GRAB
K { 02 CBK GRAB
03 ROBINSON FINAL COLL GRAB
04 ROBINSON FINAL COLL GRAB
05 PUSEY FORCE DRAIN GRAB
06 PUSEY FORCE DRAIN GRAB
07 CBK GRAB
08 ROBINSON FINAL COLL GRAB
09 PUSEY FORCE DRAIN GRAB

TEST CODES and NAMES used on this workorder

FL	FLUORIDE
F COLI	FECAL COLIFORM
N AMM	NITROGEN AMMONIA
T COLI	TOTAL COLI (COLILERT)

Page 2 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID CBK GRAB FRACTION 01A TEST CODE F_COLI NAME FECAL COLIFORM
Date & Time Collected 07/30/98 11:20:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....	50

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Page 3 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID CBK GRAB FRACTION 01A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 07/30/98 11:20:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM.....	5200

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Received: 07/30/98 Results by Sample

SAMPLE ID CMK GRAB SAMPLE # 02 FRACTIONS: A
Date & Time Collected 07/30/98 11:20:00 Category WATER

N_AMM 0.212
mg/L DL=0.04

Page 5 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID ROBINSON FINAL COLL GRAB FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 07/30/98 12:00:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....	1070

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Page 6 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID ROBINSON FINAL COLI GRAB FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 07/30/98 12:00:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM.....	4200

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

SAMPLE ID ROBINSON FINAL COLL GRAB SAMPLE # 04 FRACTIONS: A
Date & Time Collected 07/30/98 12:00:00 Category WATER

N_NO3	0.513
mg/L	DL=0.04

Page 8 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID PUSEY FORCE DRAIN GRAB FRACTION 05A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 07/30/98 11:60:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....	3900

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Page 9 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID PUMEY FORCE DRAIN GRAB FRACTION 02A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 07/30/98 11:40:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM.....	12800

Notes and definitions for this report:
TEST DATE: 07/30/98
UNITS = cfu / 100ml

Page 18 TOXIKON CORP. REPORT Work Order # 98-07-558
Received: 07/30/98 Results by Sample

SAMPLE ID PUSEY FORCE DRAIN GRAB SAMPLE # 06 FRACTIONS: A
Date & Time Collected 07/30/98 11:40:00 Category WATER

N_AMM 0.330
mg/L DL=0.04

SAMPLE ID CRK GRAB SAMPLE # 07 FRACTIONS: A
Date & Time Collected 07/30/98 11:20:00 Category WATER

FL 0.52
mg/L DL=0.1

SAMPLE ID ROBINSON FINAL COLL GRAB SAMPLE # 08 FRACTIONS: A
Date & Time Collected 07/30/98 12:00:00 Category WATER

FL 0.50
mg/L DL=0.1

SAMPLE ID PUSEY FORCE DRAIN GRAB SAMPLE # 09 FRACTIONS: A
Date & Time Collected 07/30/98 11:40:00 Category WATER

FL 0.48
mg/L DL=0.1

TEST CODE FL NAME FLUORIDE

EPA METHOD: 340.2

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA Washington D.C.

98-07-558

Chain of Custody Record

Laboratory: Toxikon (781) 275-3330

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other _____

Sampling Frequency: 3 Day Turnaround

☒ Rush

☐ Routine

X rush

WORK ORDER #: 98.07.558

DUE DATE: 08.04.98

Client: Joseph P. McCabe, Inc.

Address: 509 East First Street
South Boston MA 02127-

Contact Name: Andrew McCabe

Phone Number: (617) 268-2030

Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	Container #	Sampling Date	Sampling Time	Preservative	Analysis	Comments
~~Drain Line Grab~~ CBK grab	1	125 ml	B	1	7/30	1120	None	Total Coliform, Fecal Coliform CBK	pH= 5.61
~~Drain Line Grab~~ CBK grab	1	250ml	P	1	"	"	H2SO4	NH3	Temp= 25.4°C
Robinson Final Coll. grab	1	125ml	B	1	"	1200	None	Tot. Coliform, Fecal / Robinson	pH= 8.03
Robinson Final Coll. grab	1	250	P	1	"	"	H_2SO_4	NH_3	Temp= 20.8°C
Pusey Force Drain grab	1	125ml	B	1	"	1130	None	Tot. Coliform, Fecal Pusey	pH= 7.33
Pusey Force Drain grab	1	250	P	1	"	"	H_2SO_4	NH_3	Temp= 21.8°C
CBK grab	1	250	P	1	"	1120	None	Flouride	
Robinson Final Coll. grab	1	250	P	1	"	1200	None	Flouride	
Pusey Force Drain grab	1	250	P	1	"	1130	None	Flouride	

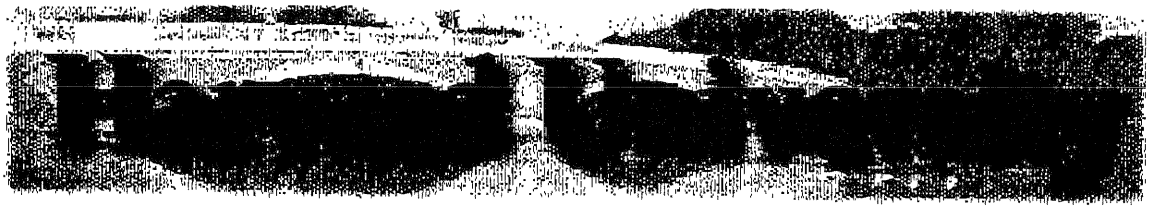
SAMPLER'S SIGNATURE	DATE	TIME
	7/30/98	1220

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	7/30/98 1415		7-30-98	14:15
2				
3				
4				
5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

R-T

* All samples chilled to 4 degrees Celsius.



ENGINEERING & UTILITIES

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Larry Lovenne	Larry Muench
COMPANY:	DATE:
Cambridge DPW	October 27, 1998
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
617-349-4868	10
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
617-349-4848	
RE:	YOUR REFERENCE NUMBER:
Harvard University Storm Drain Project	

☐ FOR YOUR INFORMATION ☒ FOR REVIEW ☒ PLEASE COMMENT ☐ PLEASE REPLY

NOTES/COMMENTS

Larry,

Attached please find the storm drainage test results for the Emerson/Robinson Storm Drainage Project taken 10-14-98.

Test samples were taken at the same three locations as the previous test (Robinson 0+00, Pusey Forced Main, Pusey Sump) and the results for this test were very favorable. The Fecal Coliform count at all three locations were below the 200-cfu/100ml limit.

For these tests, EST used a sterile sample collection tube at each test location, three tubes in all. The tubes, which resembled two-foot long fluorescent light bulbs, were in sealed plastic packages from the supplier. I felt that these collection containers were a vast improvement in terms of sterilization to the past containers used for previous tests. However, the configuration of these tubes made it very difficult to obtain a large sample at Robinson 0+00 where the water level was very low, and at the Pusey Forced Main where the water discharged from the 4 inch pipe at a high flow rate. The collector obtained only enough water for a fecal coliform test at Robinson 0+00, and only enough water for fecal coliform and total coliform tests at Pusey forced main. A large enough quantity was obtained at Pusey Sump to perform all three tests.

I will schedule the next series of tests for sometime in mid-November, and will contact you with the planned date. I am planning to use a different sampling agency and testing lab as the new collection devices used by EST are not well suited to my test sources. Please call me if you have any questions on these test results or if you have any other questions.

50 CHURCH STREET, 4TH FLOOR, CAMBRIDGE, MA 02138
TEL. 617.496.5090 FAX 617.496.1669

Page 1 TOXIKON CORP. REPORT Work Order # 98-10-276

Received: 10/14/98 10/21/98 14:07:56

REPORT HARVARD UNIVERSITY ENG.
TO 50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139
617-495-5560
ATTEN LARRY MUENCH

PREPARED TOXIKON CORPORATION
BY 15 WIGGINS AVE
BEDFORD, MA 01730
ATTEN PAUL LEZBERG
PHONE (617)275-3330

CERTIFIED BY
CONTACT JAYSON

CLIENT HARVARD UNIV SAMPLES 3
COMPANY HARVARD UNIVERSITY ENG
FACILITY 50 CHURCH STREET, 4TH FLOOR
CAMBRIDGE, MA 02139

MA CERT # M-MA064: TRACE METALS, SULFATE,CYANIDE,RES. FREE CHLORINE, Ca, TOTAL ALK., TDS, pH, THMs, VOC, PEST.,NUTRIENTS, DEMAND. O&G, PHENOLICS, PCBs . CT DHS #PH-0563, NY #10778 FL HRS E87143, NJ DEP 59538, NC DNR286, SC 88002, NH 204091-C.

WORK ID HARVARD UNIV. CONSTRUCTION
TAKEN 10/14/98
TRANS
TYPE WATER
P.O. #
INVOICE under separate cover

VERIFIED BY:
CERT#MMA064

SAMPLE IDENTIFICATION		TEST CODES and NAMES used on this workorder	
01	ROBINSON 0+00	F COLI	FECAL COLIFORM
02	PUSEY SUMP	N AMM	NITROGEN AMMONIA
03	PUSEY FORCE MAIN	T COLI	TOTAL COLI (COLILERT)

Page 2 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 Results by Sample

SAMPLE ID ROBINSON 0+00 FRACTION 01A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:10:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....	<10

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

Page 3 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/16/98 Results by Sample

SAMPLE ID PUSEY SUMP SAMPLE # 02 FRACTIONS: A
Date & Time Collected 10/14/98 13:45:00 Category WATER

N_AMM	ND	
mg/L	DL=0.04	

Page 4 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP FRACTION 02A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:45:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....	60

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

Page 5 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY SUMP FRACTION 02A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 10/14/98 13:45:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM.....	300

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

Page 6 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE F COLI NAME FECAL COLIFORM
Date & Time Collected 10/14/98 13:25:00 Category WATER

FECAL COLIFORM

	RESULT
FECAL COLIFORM.....	10

Notes and definitions for this report:
TEST DATE: 10/15/98
UNIT$ = cfu / 100ml

Page 7 TOXIKON CORP. REPORT Work Order # 98-10-276
Received: 10/14/98 Results by Sample

SAMPLE ID PUSEY FORCE MAIN FRACTION 03A TEST CODE T COLI NAME TOTAL COLI (COLILERT)
Date & Time Collected 10/14/98 13:25:00 Category WATER

TOTAL COLIFORM

	RESULT
TOTAL COLIFORM.....	110

Notes and definitions for this report:
TEST DATE: 10/15/98
UNITS = cfu / 100ml

TEST CODE F COLI NAME FECAL COLIFORM

STANDARD METHOD: 9222D

Reference: Standard Methods for Examination of Water and Wastewater.
APHA-AWWA-WACF. 18th Edition. 1992. APHA Washington D.C.

TEST CODE N_AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes.
EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE T COLI NAME TOTAL COLI (COLILERT)

METHOD:PRESENCE-ABSENCE (P-A) COLIFORM TEST

Reference: Based on procedures set forth in Standard Methods for the Examination
of Water and Wastewater, APHA-AWWA-WACF, 18th Edition, 1992. APHA
Washington D.C.

98-10-276

Chain of Custody Record

EST ENVIRONMENTAL SAMPLING TECHNOLOGY

Environmental Sampling Technology
85 Franklin Street
Needham, MA 02494
Phone (781) 455 - 0003
Fax (781) 455 - 8336

Laboratory: Toxikon (781) 275-3330

Container Type
P - Plastic
G - Glass
V - VOA
B - Bacteria

Sample Type
1. Wastewater
2. Groundwater
3. Soil
4. Drinking Water
5. Surface Water
6. Other _____

Sampling Frequency: ☐ Rush ____Day Turnaround ☐ Routine

WORK ORDER #: 98.10.276
DUE DATE: 10.28.98

Client: Harvard University Engineering & Utilities
Address: 50 Church Street, 4th Floor
Cambridge MA 02139-

Contact Name: Larry Muench
Phone Number: (617) 495-5560
Description: Harvard University Construction

LOCATION (Sample Identification)	Sample Type	Container Size	Container Type	Container #	Sampling Date	Sampling Time	Preservative *	Analysis	Comments
(1) ROBINSON 0+00	1	125 ml	B	2	10/14	1310	None	~~Total Coliform~~, Fecal Coliform	pH= 8.06
	~~1~~	~~1 L~~	~~P~~	~~1~~	10/14	1310	~~H2SO4~~	~~NH3~~	Temp= 15.7°C
(2) PUSEY SUMP	1	125 ml	B	2		1325 1345	None	Total Coliform, Fecal Coliform	pH= 7.62
(3)	1	1 L	P	1		1325 1345	H2SO4	NH3	Temp= 17.7°C
(4) PUSEY FORCE MAIN	1	125 ml	B	2		1345 1325	None	Total Coliform, Fecal Coliform	pH= 7.79
	~~1~~	~~1 L~~	~~P~~	~~1~~	V	~~1345~~	~~H2SO4~~	~~NH3~~	Temp= 16.5°C

SAMPLER'S SIGNATURE	DATE	TIME	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
Greg Cataldo	10/14/98	1345	1	Greg Cataldo	D. Marlow	10-14-98	17:20
			2				
			3				
			4				
			5				

Additional Comments:
Site Contact: Jim Smith, Cell: (617) 839-1638

(2-7)

* All samples chilled to 4 degrees Celsius.

10/27/98 17:17 6174961669 ENG & UTIL 010